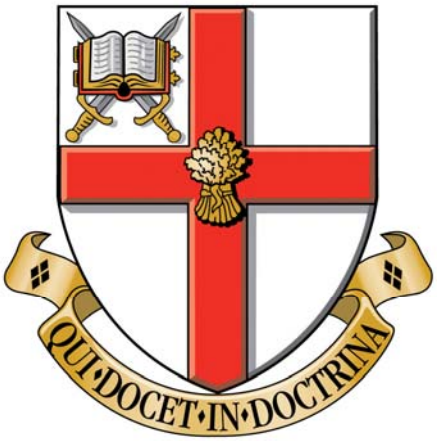



University of Chester

Enhancing Learning and teaching with Technology

Learning Technology Unit

# Learning Technology Unit

An introduction to designing usable and accessible content for online learning

# Introduction

"The brave new world of net delivered and assisted learning is exciting and real"

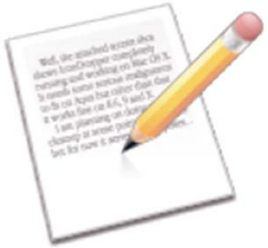
"Online Learning is not about taking a course and putting it on the desktop, it is about a new blend of resources, interactivity, performance support and structured learning activities."

Elliott Masie, The Masie Center-Technology and Learning Think-Tank

# Session Outline

During this session we will look at:

- Learning styles and the online learning;
- The needs and requirements of learners;
- Accessibility guidelines for the development of online materials;
- Tips and guidelines on writing for the web;
- Demonstrate some of the tools we have available to support the development of accessible online materials;



# Auditory, Visual and Kinesthetic Learning Style

- Based on research by neuro-linguistic programming experts Bandler, Grinder;
- Identifies three distinct learning styles;
- People generally use a combination of all three styles;
- 70% of learners will be able to cope however a lesson is presented;
- Most adults are visual learners;

"Everyone has their own learning style or combination of learning styles, and this is no different when teaching or learning online"

# Auditory Learners

- Like to ‘thought shower’;
- Work in groups;
- More than just sound files / podcasts;
- Translate the aural aspect of their face to face course into the communicative aspect of their online course;

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- Discussion Boards;
- Chat Rooms;
- Blog;
- Group share;

# Visual Learners

- Like a lot of graphics to help them process text-based information;
- Graphics must relate to the content;
- When you add graphics, you increase student recall by up to 50%;

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- Rich Media Authoring;
- Themes / Templates;
- Embedded Media (Video, Sound);
- Discussion Boards;
- Chat;


# Kinesthetic Learners

- Like to click the mouse & move things around;
- Like interactive content;
- Writing things down helps kinesthetic learners;
- Learn best when they are involved or active;
- Use movement as a memory aid;

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- Flash Technology (from September 2007);
- Online quiz / test tool;
- Reflection tool;

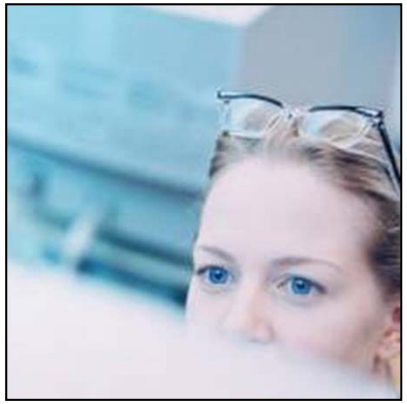
# Online accessibility

‘A key principle of Web accessibility is designing Web sites and software that are flexible to meet different user needs, preferences, and situations’

Web Accessibility Initiative (WAI): W3C

# Online accessibility scenario: problem

Jayne is taking several distance learning courses in physics. She is deaf. She had little trouble with the curriculum until the university upgraded their on-line courseware to a multimedia approach, using an extensive collection of audio lectures.



For classroom-based lectures the university provided interpreters; however for Web-based instruction they initially did not realise that accessibility was an issue, then said they had no idea how to provide the material in accessible format.

# Online accessibility scenario: solution

The University had the lectures transcribed and made this information available through their Web site along with audio versions of the lectures. For an introductory multimedia piece, the university used a SMIL-based multimedia format enabling synchronised captioning of audio and description of video.

The school's information managers quickly found that it was much easier to comprehensively index the audio resources on the accessible area of the Web site, once these resources were captioned with text.

The professor for the course also set up a chat area on the Web site where students could exchange ideas about their coursework. Although she was the only deaf student in the class and only one other student knew any sign language, she quickly found that the Web-based chat format, and the opportunity to provide Web-based text comments on classmates' work, ensured that she could keep up with class progress.

# Online accessibility

‘The Web is an increasingly important resource in many aspects of life. It is essential that content is accessible in order to provide equal access and equal opportunity to people with disabilities’

Web Accessibility Initiative (WAI): W3C

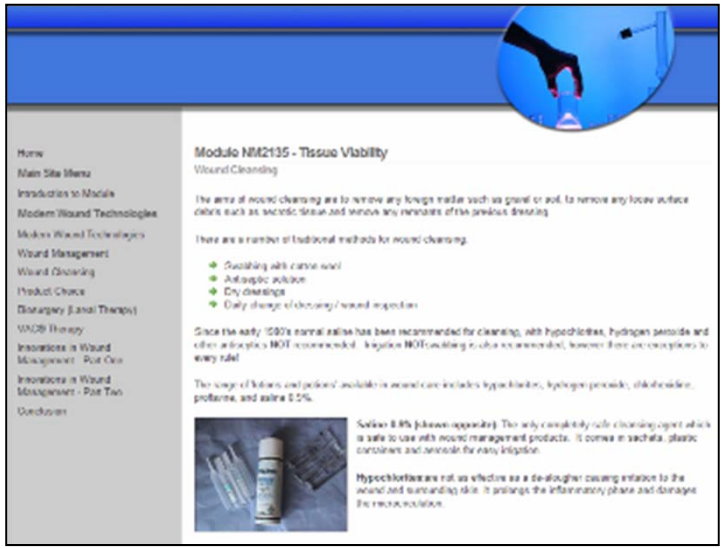
# Accessibility guidelines for online development

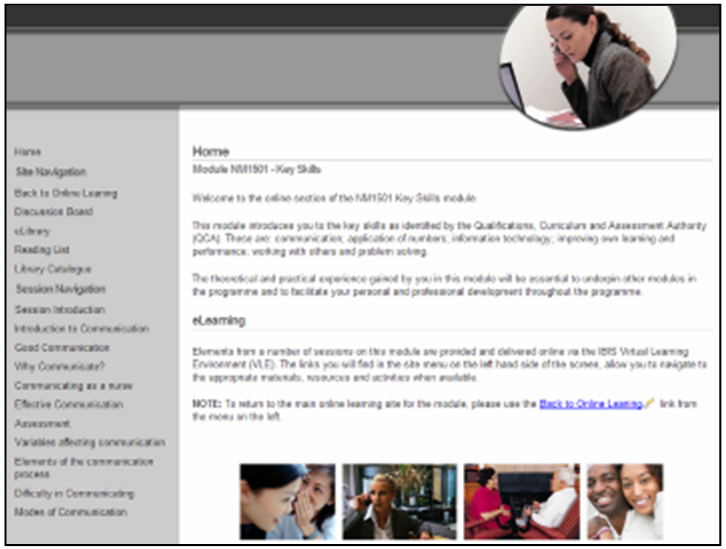
- The Web Content Accessibility Guidelines (WCAG) explain how to make Web content accessible to people with disabilities;
- These are provided by the World Wide Web Consortium (W3C);
- Widely regarded as the international standard for Web accessibility;
- W3C provide a list of key checkpoints for the development of online content to help promote accessibility;

- There are a number of tools and technologies available within IBIS to support this development;

# Online Navigation

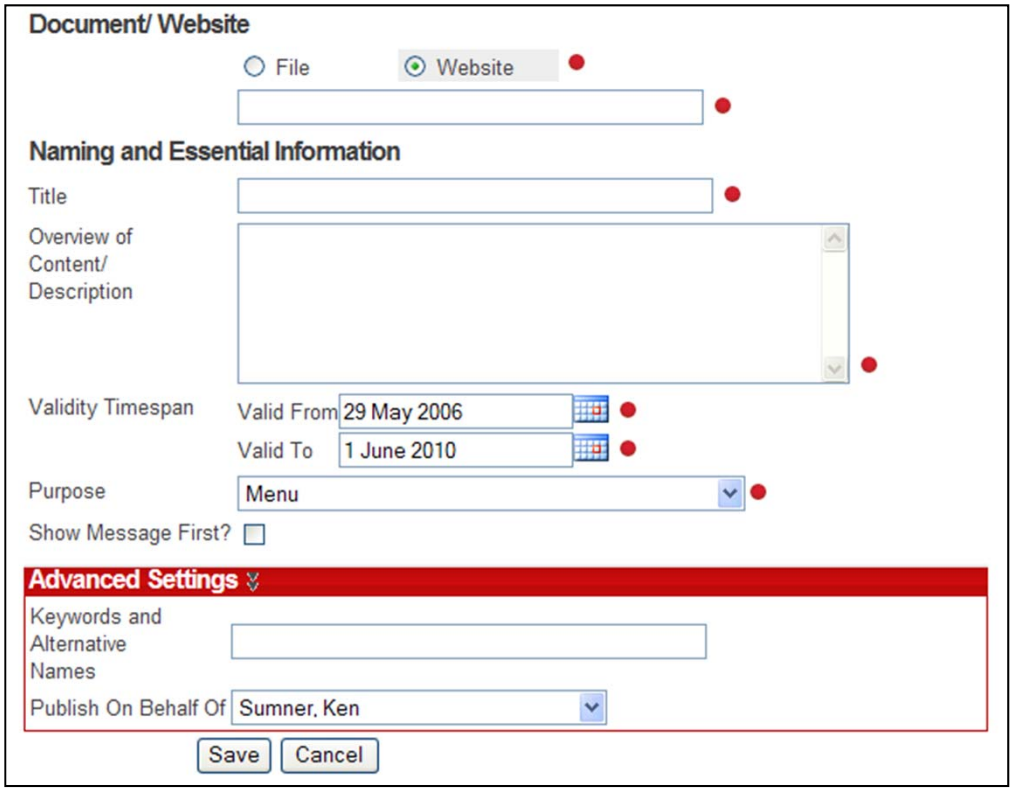
- It is important to structure content in a logical way;
- The use of a menu system allow good navigation through content;
- Dead-end links should always been avoided;
- Ensure all pages in your site have at minimum a link back to the main "home" page;
- Use appropriate and consistent page and section headings;
- The use of an IBIS ‘theme’ allows the automatic creation of a menu system to aid with content navigation;



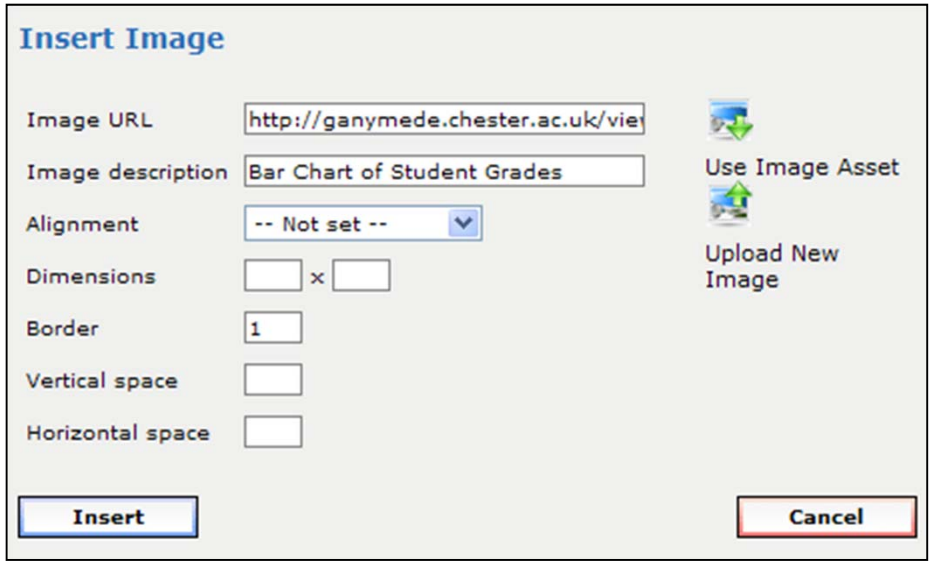
# Finding information quickly and efficiently

- Enter appropriate information into the document / page ‘Naming and Essential Information’ section;
- This metadata helps identify documents and pages to the built in search engine, making information easier to retrieve;



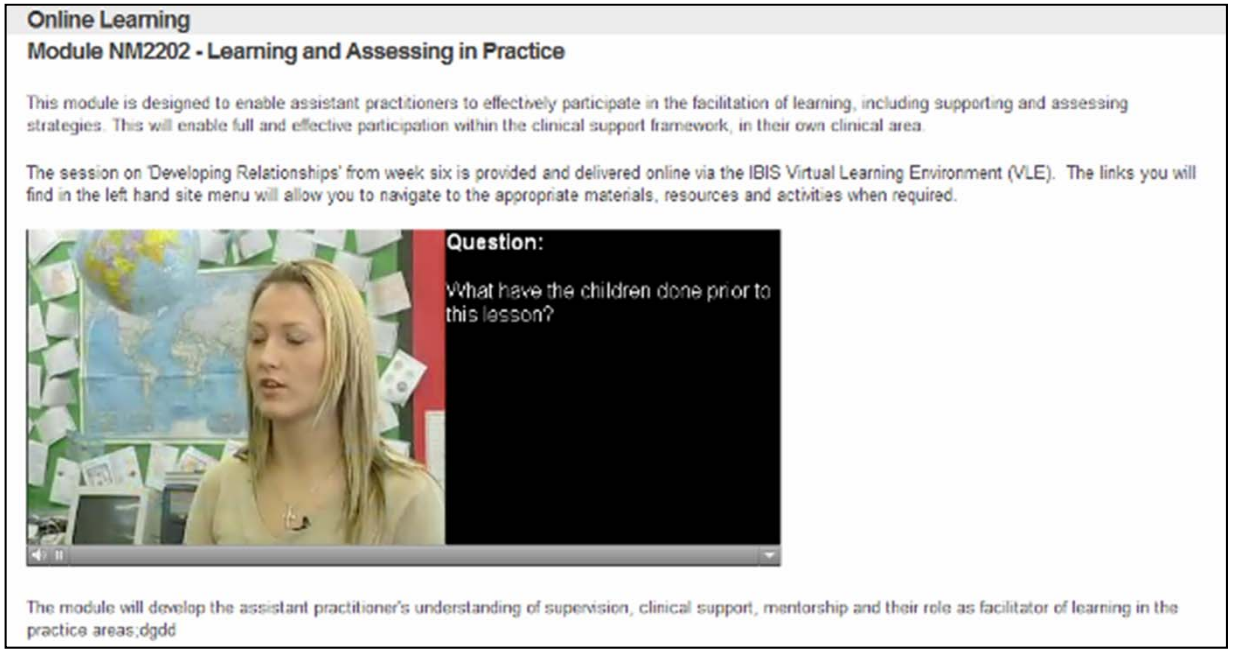
# Text equivalents for image elements

- When using images or other non-text elements, it is important to use alternative text tags;
- These identify the contents of elements to software like screen readers and non-graphical browsers;
- They provide a description of the image or non-text element;



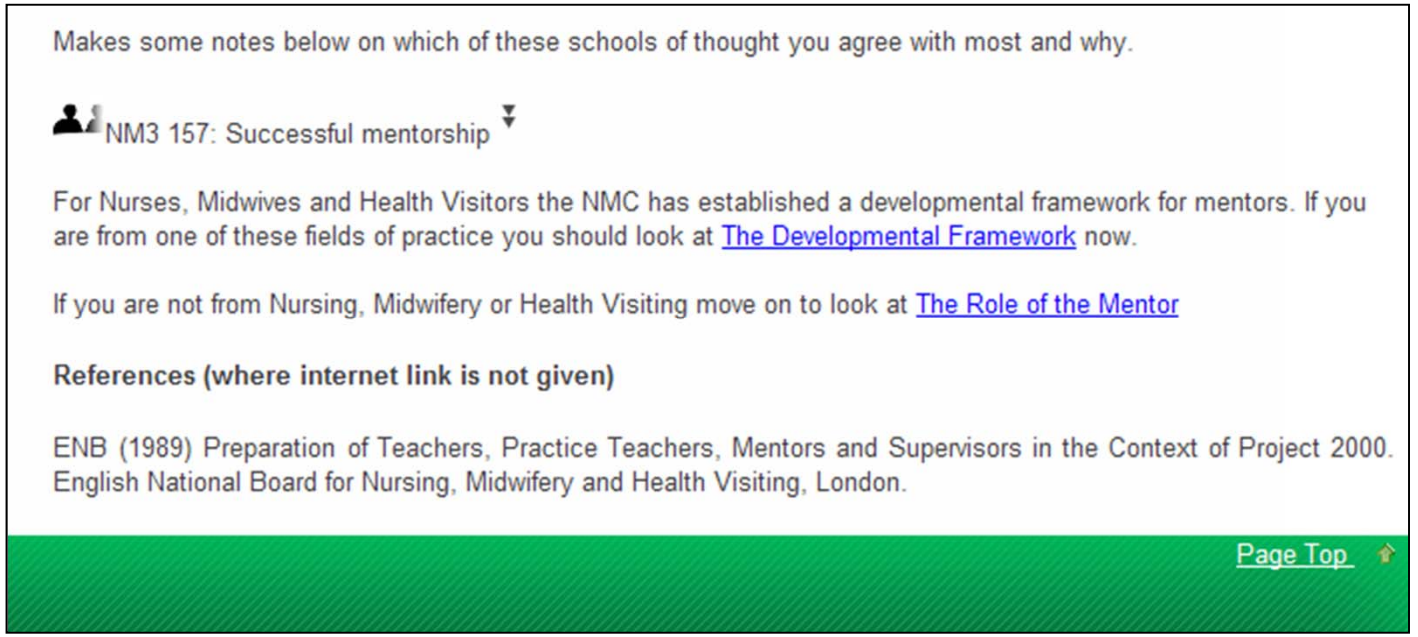
# Audio and Multimedia

- Like images, it is important to use appropriate descriptive names;
- It is vital to provide captioning and transcripts of audio, and descriptions of video;
- It's not just about accessibility for users with disabilities, these guidelines help promote and develop accessible content for all users with equipment limitations e.g. no sound card, speakers, small format screen, etc.



# Using hyperlinks

- Hyperlink text should not be overly general;
- Do not use phrases like “Click Here“, these can be device-dependent (it implies a pointing device), and says nothing about what is to be found if the link if followed;
- Link text should indicate the nature of the link target, e.g. “More information about sea lions“;

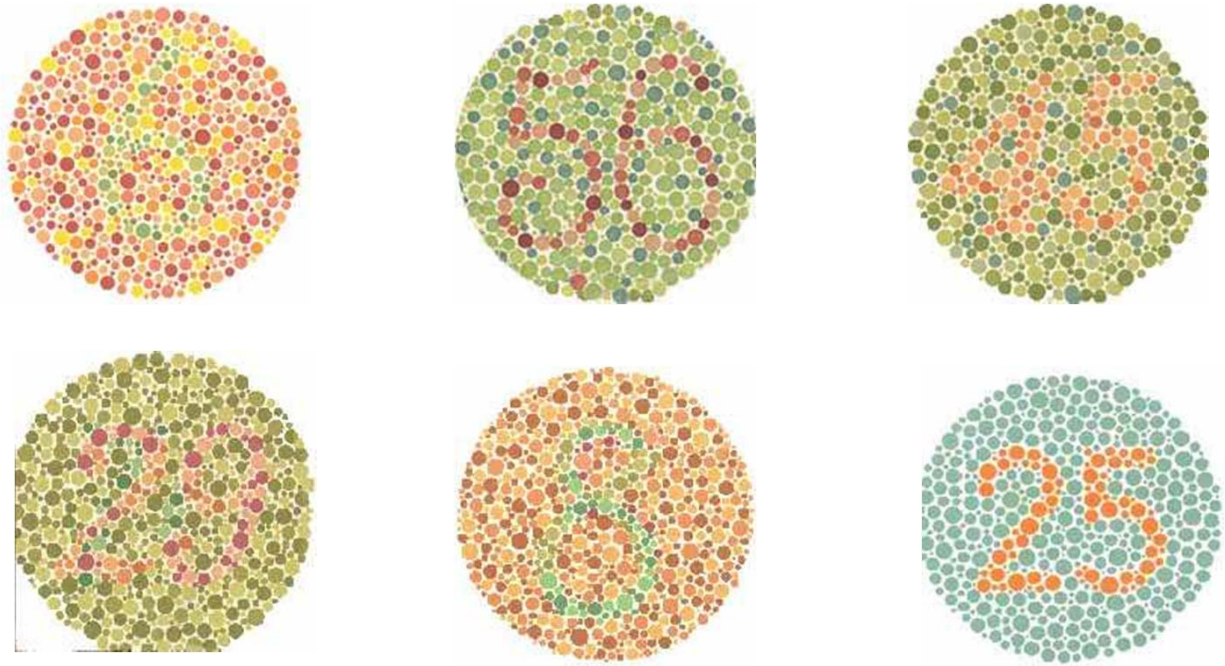


# Accessibility and the use of colour

- Ensure good contrast between text and background colours;
- Don’t use too many different colours, this can be confusing to users;
- Large areas of bright colours can be tiring, try to use bright colours sparingly;
- Do not rely on colours alone to express information e.g. click on the red box;
- When developing content take into account colour-blindness;
- Be mindful of standards surrounding things like the colour of hyperlinks;
- Our themes use CSS

# Colour-blindness

- There are four types of colour-blindness, two main types and two rarer forms;
- The most common type is Red-Green Colour-blindness, consisting of two forms: Deuteranopia, and Protanopia;
- The two rarer forms of colour-blindness are Tritanopia, and Monochromancy;



# Writing for the web

‘Online users do not actually read, instead they scan text’

John Morkes & Jakob Nielsen, 1997

# How users read online

- They do not read, instead they scan the pages trying to pick out the information they want or need;
- Online users do not like long, scrolling pages, they prefer the text to be short and to the point;
- Online users typically dislike overly hyped language;
- User want to be able to easily find what they are looking for;
- Users should feel comfortable with the layout of text and it should be viewable in a consistent manner;

# Tips for writing online

- Create short scannable text sections;
- Chunk information with relevant headings and subheadings;
- Use factual information;
- Be concise (move less important material from top-level pages to secondary pages);
- Write less (convert print to Web by reducing by at least 50%);
- Write in an objective style instead of promotional;
- Make content ‘searchable’ and easy to find by using appropriate metadata;
- Convert technical material to plainer English;
- Highlight key information using bold, italics, uppercase, etc;

# Review

- By using the technology we have, the development of accessible content is made easier, but still requires thought;
- Developing accessible content is not just about being mindful of users with disabilities, although this is important and we are legally obliged to take sufficient steps to help ensure accessibility, it’s also about appealing to different learning styles, and the individual needs of users including equipment, software and circumstances;